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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/550,870	07/24/2006	Iris Bahir	1120-PCT-US	1448
7590 Albert Wai-Kit Chan Law Offices of Albert Wai-Kit Chan World Plaza Suite 604 141-07 20th Avenue Whitestone, NY 11357			EXAMINER  ZHENG, LI	
			ART UNIT 1638	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

## Application No.

10/550,870

## Applicant(s)

BAHIR ET AL.

## Examiner

LI ZHENG

## Art Unit

1638

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☐ Claim(s) 25-48 is/are pending in the application.
- 4a) Of the above claim(s) 26-29, 34-38 and 45-48 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 25, 30-33 and 39-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/888)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. Applicant's amendments to claims 25, 30-31, 33 and 39-42 filed on 12/28/2007 are acknowledged and entered.

Claims 25-48 are pending.

Claims 26-29, 34-38 and 45-48 are withdrawn for being drawn to non-elected invention.

Claims 25, 30-33 and 39-44 are examined on the merits.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. The objection to claim 25 is withdrawn due to claim amendment.

4. The rejections of claims 25, 30-33 and 39-44 under U.S.C 112, Second Paragraph, are withdrawn due to claim amendment.

***Claim Rejections - 35 USC § 112***

***New Matter***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

Art Unit: 1638

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 25, 30-33 and 39-44 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Applicants have amended claim 25 by adding a limitation of "a monotonous repeat of two to six nucleotides". Such limitation constitutes new matter which is not supported by specification. Applicants allege that support for the amendment may be found, inter alia, from SEQ ID NO: 4 which is a monotonous repeat of two nucleotides (response, page 7, 4<sup>th</sup> paragraph). However, one species does not provide support for newly added limitation. Applicants are required to point to support for "a monotonous repeat of two to six nucleotides" or to amend the claims to delete the NEW MATTER.

6. Claims 25, 30-33 and 39-44 remain rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention, for the reasons of record stated in the Office action mailed September 21, 2007. Applicants traverse in the paper

Art Unit: 1638

filed December 18, 2007. Applicants' arguments have been fully considered but were not found persuasive.

Applicants argue that MS-like sequences are well known in the art and would be readily recognized by a person with ordinary skill in the art and that the specification discloses a representative number of MS-like sequences comprising monotonous repeats of two, three or four nucleotides (response, page 8, last paragraph and page 9, 1<sup>st</sup> paragraph).

The Office contends that Applicants fail to describe a representative number of the claimed MS-like sequences encompassing monotonous repeats of two to six nucleotides. For example, there could be over four thousand of possible variants for a six nucleotides sequence, while the specification only describes one species, (AAGTTC)<sub>n</sub>, in the genus. Further, for a given two to six nucleotides sequence, it is also unclear how long the repeat would be.

7. Claims 25, 30-33 and 39-44 remain rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method for the generation of genetically diverse plants via the incorporation of one of the exogenous microsatellite(MS) sequences of SEQ ID NO: 1-5, does not reasonably provide enablement for a method for the generation of genetically diverse plants via the incorporation of any exogenous microsatellite (MS) sequence into the plant genome. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make or use the invention commensurate in scope with these claims, for the reasons of record stated in the Office action mailed

Art Unit: 1638

September 21, 2007. Applicants traverse in the paper filed December 18, 2007.

Applicants' arguments have been fully considered but were not found persuasive.

Applicants first present similar argument as discussed in the written description rejection. Therefore, for the similar reason as discussed above, Applicants' argument is not persuasive.

Applicants further argue that a person skilled in the art would construct or isolated the claimed MS-like sequences and transform them into plants to generate genetically diverse plants (response, page 10, 1<sup>st</sup> paragraph).

The Office contends that without further guidance, there is undue trial and error to test all the different permutations and sequences of different length. For example, it is unclear whether the monotonous repeats are contiguous or not. It is also unclear how long the monotonous repeats are.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. The rejection of claims 25, 30-33 and 39-44 under 35 U.S.C. 102(b) as being anticipated by LeClere et al. is withdrawn due to claim amendment.

9. Claims 25, 30 and 41 are rejected under 35 U.S.C. 102(e) as being anticipated by Havukkala et al. (US Patent Application Publication Number 2003/0018185).

The claims are drawn to a method for the genetically diverse plants via the incorporation of exogenous microsatellite (MS) sequence comprising a monotonous repeat of two to six nucleotides into the plant genome comprising introducing MS-like DNA fragments into plant cells and selecting and cultivating plants comprising said DNA fragments; or wherein optionally the MS-like DNA fragments obtained in step (a) are ligated into suitable vectors and then proceed to step (b).

Havukkala et al. teach that DNA constructs can be used to introduce microsatellite markers into transgenic plant [paragraph [0064]]. According to the definition of microsatellite (paragraph [0041]), the term refers to an array of tandemly repeated nucleotide motifs wherein each motifs consists of between 2 and about 10 base pairs. Therefore, the reference teaches all the limitations set forth by the claims.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 25, 30-33 and 39-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Havukkala et al. (US Patent Application Publication Number

Art Unit: 1638

2003/0018185) as for claims 25, 30 and 41, in view of Gallardo et al. (1999, Planta 210:19-26).

The claims are drawn to a method for the genetically diverse plants via the incorporation of exogenous microsatellite (MS) sequence comprising a monotonous repeat of two to six nucleotides into the plant genome comprising introducing MS-like DNA fragments into plant cells and selecting and cultivating plants comprising said DNA fragments; or wherein optionally the MS-like DNA fragments obtained in step (a) are ligated into suitable vectors and then proceed to step (b); or wherein the exogenous MS is preferably introduced concomitantly with a selective marker of a kanamycin resistant gene; or wherein said DNA fragment is introduced via any one of electroporation, chemical, mechanical means or liposomes; wherein said DNA fragment is introduced by a genetic vehicle such as a plasmid or a viral vector; or wherein said DNA fragment is obtained via synthesis or cloning; wherein said exogenous DNA is produced by the ligation of several DNA pieces; or wherein the generation of genetically diverse plants further includes the generation of one of cells, seeds or progeny of said plants; or a plant variety produced by the method of claim 25, and cells, seeds and progeny thereof.

The Office interprets that "mechanical means" of transformation encompasses any transformation methods.

The teaching of Havukkala et al. is discussed as above.

Havukkala et al. do not teach that the exogenous MS is preferably introduced concomitantly with a selective marker of a kanamycin resistant gene; or that said DNA fragment is introduced via any one of electroporation, chemical, mechanical means or liposomes; or that said DNA fragment is introduced by a genetic vehicle such as a



Art Unit: 1638

plasmid or a viral vector; or that said exogenous DNA is produced by the ligation of several DNA pieces; or that the generation of genetically diverse plants further includes the generation of one of cells, seeds or progeny of said plants; or a plant variety produced by the method of claim 25, and cells, seeds and progeny thereof.

Gallardo et al. teach a binary vector with kanamycin resistant gene as selection marker (Figure 1). Gallardo et al. teach that GS cDNA was cloned by ligation (page 20, paragraph bridging left and right columns). Gallardo et al. teach regeneration of transgenic pine tree (page 20, 3<sup>rd</sup> paragraph).

Given the recognition of those of ordinary skill in the art of the value of introducing microsatellite sequence isolated from pine into transgenic plant as taught by Havukkala et al (paragraph [0064]), it would have been obvious for a person with ordinary skill in the art to clone the microsatellite sequence of Havukkala et al. into the binary vector of Gallardo et al. and further transform the resultant vector into the pine tree according to the teaching of Gallardo et al. One skilled in the art would have been motivated to do so given that the transformation vector and method as taught by Gallardo et al. is an obvious choice for introducing microsatellite sequences into transgenic pine tree.

Thus the claimed invention would have been *prima facie* obvious as a whole to one of ordinary skill in the art at the time it was made, especially in the absence of evidence to the contrary.

*Summary*

No claim is allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Li Zheng whose telephone number is 571-272-8031. The examiner can normally be reached on Monday through Friday 9:00 AM - 5:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on 571-272-0975. The fax phone

Art Unit: 1638

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Stuart F. Baum/  
Primary Examiner, Art Unit 1638